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FOR THE
REMOTE MINEHUNTING SYSTEM (RMS)**

ACQUISITION CATEGORY (ACAT) _____

September 1991

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SEPTEMBER 1991

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Record of Changes

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LIST OF TERMS AND ACRONYMS

ACAT	Acquisition Category
CDR	Critical Design Review
COSAL	Consolidated Shipboard Allowance List
DID	Data Item Description
FMECA	Failure Modes Effects and Criticality Analysis
ILS	Integrated Logistic Support
ILSP	Integrated Logistic Support Plan
MIS	Management Information System
MP&T	Manpower, Personnel, & Training
NAVSEA	Naval Sea Systems Command
NCSC	Naval Coastal Systems Center
OJT	On-The-Job Training
PHS&T	Packaging, Handling, Storage and Transportation
PMS	Planned Maintenance System
PPL	Provisioning Parts List
RIL	Repairable Items List
R,M & QA	Reliability, Maintainability, and Quality Assurance
RMS	Remote Minehunting System
RMSTDC	RMS Technical Data Center
S&TE	Support and Test Equipment
SM&R	Sources, Maintenance level, Recoverability
SPCC	Ships Parts Control Center
SUBDEVGRUONE	Submarine Development Group One

LIST OF RMS PROGRAM DOCUMENTS

The following documents form the basis for RMS integrated logistics planning:

Operational Requirement for Remote Minehunting System -

Test and Evaluation Master Plan -

RMS Quality Assurance Program Plan -

RMS System Safety Program Plan -

RMS Reliability and Maintainability Program Plan -

RMS System Concept -

RMS Standalone Documents

Test and Evaluation Master Plan

Program Cost Estimate

Independent Cost Estimate

Cost & Operational Effectiveness Analysis

Acquisition Program Baseline

Manpower Estimate Report

Waivers/Reports

Integrated Program Summary

Execution Status

Threat Highlights-Shortfalls of Existing Systems

Alternatives Assessed & Results

Most Promising Alternatives and Rationale

Acquisition Strategy

Cost Drivers & Major Tradeoffs

Risk Assessments & Plans to Reduce Risk

Recommendations

Appendices

A. Program Structure

B. Program Life-Cycle Cost Estimate Summary

C. Acquisition Strategy Report

D. Risk Assessment

E. Environmental Analysis

F. Affordability Assessment

G. Cooperative Opportunities Document

LIST OF ILS GUIDANCE DOCUMENTS

DoD Instruction 5000.1	Defense Acquisition Management and Procedures
NAVSEA Instruction	Acquisition and Management of Integrated Logistic Support for Systems and Equipment
MIL-STD-470	Maintainability Program Requirements
MIL-STD-471	Maintainability Verification/Demonstration/Evaluation
MIL-STD-1367	Packaging, Handling, Storage and Transportaion Program Requirements
MIL-STD-1388-1A	Logistic Support Analysis
MIL-STD-1388-2B	DoD Requirements for a LSA Record
MIL-STD-1379	DoD Training Program Requirements
MIL-STD-1561	Provisioning Procedures
MIL-M-63036 (TM)	Manuals, Technical: Operator's Preparation of
MIL-M-63038	(TM) Manuals, Technical: Maintenance Preparation of

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1.0 INTRODUCTION

This Integrated Logistic Support Plan (ILSP) has been prepared by the Naval Coastal Systems Center (NCSC), to meet the requirements of NAVSEA Integrated Logistic Support Procedures Manual S0300-BD-PRO-030 dated October 1989.

The purpose of this ILSP is to provide a management plan for ensuring that support elements (i.e. Technical Manuals and Training) for the Remote Minehunting System (RMS) are available for delivery upon turn-over of the RMS system from NCSC to the Fleet. This ILSP will be utilized by the NCSC Project Manager as the principal logistics management document for the RMS during the Full Scale Development Phase.

This ILSP will be updated when new project direction is received, when there are changes that involve ILS elements, before milestone decision reviews, and when there are major system configuration changes.

2.0 BACKGROUND AND SYSTEM CHARACTERISTICS

The U.S. Navy has the requirement to perform Remote Minehunting operations to include detecting, and localizing mines (and mine like objects). Capable of providing a rapid response capability to requirements of U.S. Navy Battle Groups, the RMS will provide a sustained forward presence in operational areas, egress and exit lanes, will ensure safe operations in economic, logistic shipping and port locations, and maintain open operations of critical ports.

Still in Concept Formulation, the RMS (Figure 2-1) is envisioned as an autonomous system designed for real-time operation. Further information regarding performance requirements and design considerations are available in the Remote Minehunting System Technical Operational Requirements (TOR) dated available upon request from the Naval Coastal Systems Center (Code 3120).

The RMS is an Acquisition Category (ACAT) _____ project being developed in response to the requirements of Navy Operational Requirement (OR) _____. The RMS is being designed and built at NCSC, Panama City Florida. Upon completion, the RMS and its support package will be turned over for test and evaluation activities by the _____. Following an approximate _____ month evaluation period, _____ will assume responsibility for RMS operations and maintenance.

The RMS is a unique system designed to operate on Fleet ships and ~~crafts~~ of opportunity and to operate independently of platform power. The objective of this project is to develop an RMS system capable of worldwide operations; therefore, a logistic support system tailored to a team operations and maintenance concept is a primary consideration. Required characteristics are still in development and will be provided in Table 2-1 upon their becoming available.

2.1 RMS SUBSYSTEMS.

The RMS is comprised of seven functional subsystems. The following is a brief description of those subsystems. More in-depth information is available in the RMS Technical Operational Requirements dated _____.

- 2.1.1 SENSOR VEHICLE SUBSYSTEM
- 2.2.2 TOWING VEHICLE SUBSYSTEM
- 2.1.3 CONTROL STATION SUBSYSTEM
- 2.1.4 DEPLOYMENT AND RECOVERY SUBSYSTEM
- 2.1.5 AUXILIARY EQUIPMENT SUBSYSTEM

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Figure 2-1
RMS System Concept

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Table 2-1
RMS Required Characteristics

3.0 RMS PROGRAM MANAGEMENT AND REQUIREMENTS

3.1 RMS PROGRAM MANAGEMENT

RMS program participants and associated responsibilities are provided in the following paragraphs. The RMS management structure is provided in Figure 3-1.

3.1.1 RMS Program Manager (PMS-407). The RMS Program Manager is responsible for overall management of the RMS program to include planning, programming and budgeting.

3.1.2 RMS Project Manager (NCSC Code 3120). The RMS NCSC Project Manager is responsible for overall management of RMS development and testing to include ILS. The NCSC Project Manager is responsible for the execution and approval of all requirements identified in this ILSP unless otherwise noted.

3.1.3 Specialties Engineering (NCSC Code 3120). RMS Specialties Engineering (SE) is responsible for monitoring RMS design /development/evaluation activities to ensure U.S. Navy Quality, Safety and Supportability (ILS/LSA) requirements are met. RMS SE will have responsibility for the Quality Assurance efforts as defined in the RMS Quality Assurance Program Plan to be developed in FY 92. In addition, RMS SE is responsible for ensuring that Test and Evaluation plans include supportability issues and provisions for collection of supportability data. RMS SE will also act as the project Safety Officer to ensure adequate Safety procedures are in place and adhered to in RMS activities.

3.1.4 System Engineer (NCSC Code 3120). The System Engineer is responsible for providing support and assistance to other program participants in logistics related data collection. In addition, the System Engineer is responsible for ensuring that ILS is included as a part of project design reviews and test and evaluation efforts.

3.1.5 Cognizant Engineers (Mechanical, Electrical, Sonar and Mission Analysis). The Cognizant Engineers are responsible for ensuring support considerations are included as a part of their studies and analyses. The Cognizant Engineers provide technical information for inclusion in ILS studies and documentation as well as reviewing ILS plans and products for accuracy.

3.1.6 SUBDEVGRUONE. SUBDEVGRUONE will provide technical assistance to the RMS ILS program until further information is available regarding RMS operations and maintenance personnel. Assistance will include providing operational "lessons learned", regarding ILS (i.e. manpower and personnel, provisioning, technical manuals, etc.) support planning and concepts.

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Figure 3-1
RMS Project Organization

4.0 RMS PROGRAM EVENTS

4.1 INTRODUCTION

The following activities are required in order to ensure support resources can be developed in a cost effective manner and within the specified program schedule. The RMS Program Manager is responsible for insuring that support considerations are included in the development and implementation of all RMS requirements documents and specifications as follows:

As noted, the following documents are required by DOD Instruction 5000.2 dated February 23, 1991. Discussions will be required with PMS-407 to determine the strategy for development of these documents.

4.1.1 RMS Standalone Documents (Ref. DOD 5000.2 Section C, Page 2-7) "The purposes of the stand-alone supporting documentation are to comply with applicable statutorily imposed requirements, such as the Test and Evaluation Master Plan and Independent Cost Estimate, and to meet the information needs of the milestone decision authority, supporting staff, and review forums."

4.1.1.1 Test and Evaluation Master Plan

4.1.1.2 Program Cost Estimate

4.1.1.3 Independent Cost Estimate

4.1.1.4 Cost & Operational Effectiveness Analysis

4.1.1.5 Acquisition Program Baseline

4.1.1.6 Manpower Estimate Report .

4.1.1.7 Waivers/Reports

4.1.2 Integrated Program Summary (Ref. DOD 5000.2 Section C, Page 2-7) "The purpose of the Integrated Program Summary is to provide a succinct integrated picture of the program's status for use by the milestone decision authority, supporting staff and review forums."

4.1.2.1 Execution Status

4.1.2.2 Threat Highlights-Shortfalls of Existing Systems

4.1.2.3 Alternatives Assessed & Results

4.1.2.4 Most Promising Alternatives and Rationale

4.1.2.5 Acquisition Strategy

4.1.2.6 Cost Drivers & Major Tradeoffs

4.1.2.7 Risk Assessments & Plans to Reduce Risk

4.1.2.8 Recommendations

4.1.2.9 Appendices

- A. Program Structure
- B. Program Life-Cycle Cost Estimate Summary
- C. Acquisition Strategy Report
- D. Risk Assessment
- E. Environmental Analysis
- F. Affordability Assessment
- G. Cooperative Opportunities Document

4.1.3 RMS ILS Program Reviews. ILS coordination meetings and status reviews will be required to support this program. A schedule of reviews is provided in Appendix A. An ILS coordination review will be held with representatives from NAVSEA PMS-407 and the NCSC Project Manager. An initial status (30%) review will be scheduled to coincide with the Critical Design Review (CDR). "60% and 90%" reviews have also been scheduled to coincide with program events. The NCSC Project Manager will notify program personnel, provide agendas, and ensure that supportability issues are included for each review. Notification will be provided in sufficient time so that travel arrangements can be made.

4.1.4 RMS Technical Data Center. An RMS Technical Data Center (RMSTDC) is being developed to streamline the supportability process. Previously generated documentation including Remote Unmanned System (RUS) development documentation will be utilized to the extent possible. The RMSTDC will provide:

- A) Centralized files for hardware and software documentation structured in accordance with standard Project Management procedures;
- B) A Management Information System (MIS) database of RMS documentation with associated programs to recall specific information (i.e. responsible government representative, date of document, key words, and location);
- C) Administrative control of documents including librarian functions, word processing capabilities for document upgrades, document research and ILS status reporting.

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- D) The necessary data and capability for supporting Configuration Management requirements, control of drawing and document changes, and data storage analysis and reporting.
- E) The capability for technical manual, curricula, milestone and other ILS document preparation.
- F) Expanded data storage capacity in reduced media format (magnetic discs, microfiche).

Responsibility for funding and establishment will be retained by the NCSC Project Manager (Code 3120). The NCSC Project Manager will provide a plan for implementation of the RMSTDC. Specialties Engineering (Code 3120) will assist in RMSTDC implementation, document collection, and management.

4.1.5 RMS Failure Reporting System. Availability of failure data is critical to the development of all supportability elements. Procedures for implementing an effective Failure Reporting and Criticality Analysis (FRACAS) system will be provided in the Reliability and Maintainability Program Plan for the Remote Minehunting System scheduled for development in FY 93. Responsibility for implementation of the FRACAS will remain with the NCSC Specialties Engineer (Code 3120). The Cognizant Engineers will support this effort by adhering to data recording and reporting procedures.

4.1.6 RMS Test and Evaluation Master Plan Inputs. The Test and Evaluation Master Plan For the Remote Minehunting System to be developed in FY 92 will be in a format satisfactory for supportability verification and validation considerations. The NCSC System Engineer will ensure that supportability requirements are incorporated into that document.

4.1.6.1 RMS ILS Verification/Validation. RMS support items will be verified and validated prior to turnover in accordance with the test plan as discussed in paragraph ____.

4.1.7 RMS Configuration Management. The NCSC Specialties Engineer (Code 3120) will develop procedures for ensuring Configuration Management of the RMS is maintained in accordance with U.S. Navy procedures. RMS Configuration Management procedures will be developed during FY 92 for maintaining records of the RMS database and any changes made thereto. The RMSTDC management information system will be utilized for all status accounting. Procedures will include provisions for ensuring supportability personnel are included in change reviews. Configuration Management will be included by the NCSC Project Manager in ILS reviews.

5.0 ILS ELEMENT MANAGEMENT AND PARAMETERS

The Operational Requirement for the Remote Minehunting System dated will provide project requirements for the RMS program. In support of the anticipated operational requirements for the RMS, the following logistic elements are identified.

5.1 MAINTENANCE PLANNING

5.1.1 Maintenance Concept. In accordance with U.S. NAVY requirements, three levels of maintenance will be considered for support of the RMS. The Level of Repair Analysis (LORA) performed as a part of the Maintainability program will help select the optimal support concept. Based on preliminary studies conducted to date, it is anticipated that two levels of maintenance will be utilized to support the RMS project; organizational and depot; no intermediate level maintenance is planned for the RMS at this time.

5.1.1.1 Operator Maintenance - The RMS crew will include personnel trained in both operation and maintenance. Minimal repairs will be accomplished at this level. For electronics equipments, maintenance will require replacement of units down to the card or module level. Mechanical and power system maintenance will be performed to the component level. Other maintenance activities will include pre-operational checkout/ alignments and post-operation cleaning, lubrication and stowage.

5.1.1.2 Depot Maintenance - Depot level repairs will be accomplished by either NCSC (NCSC designed equipment) or contractor activities (commercial equipment). Instructions will be provided with the RMS identifying procedures to be followed for obtaining repair of items above the Organizational level.

5.1.2 Reliability, Maintainability, and Availability Design Criteria. The RMS is being developed to adhere to the following specified parameters:

Mean Time Between Failures (MTBF) - ____ hours
Mean Time to Repair - ____ hours from time of surface retrieval
Operational Availability (Ao) - ____

5.1.3 Maintenance Analysis. Maintenance analyses will be accomplished on all subsystems of the RMS to ensure the criteria identified in paragraphs 5.1.1 and 5.1.2 are achieved. Analyses to be completed are:

5.1.3.1 RMS Program Diagram. This task includes a master drawing tree of the RMS which will identify the RMS to the unit level. This drawing will be maintained at the RMSTDC and used as the

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primary document for all supportability efforts. A proposed numbering system (Table 5-1) will be used for drawing control and for supportability issue tracking. The RMS NCSC Project Manager will have responsibility for this effort.

5.1.3.2 Use Study. The intent of the use study is to identify and document pertinent supportability factors related to the intended use of the RMS. It is the prerequisite analysis to all other tasks. Task 201 requirements of MIL-STD 1388-1A will be used as guidance for the conduct of this study. The findings of this study will be documented in accordance with Data Item Description (DID) number DI-S-7115 Use Study Report. The Use Study Report will be accomplished by the NCSC RMS Project Manager and updated prior to the 60% review. (Reference Appendix A).

5.1.3.3 Failure Modes Effects and Criticality Analysis (FMECA). The NCSC Project Manager will conduct a FMECA in accordance with the requirements of Reliability and Maintainability Program Plan dated _____. In conjunction with this effort, a Reliability estimate will be made of the RMS to the Unit level for Electronic equipment and the component level for mechanical and power support equipment. The results will be provided in a listing of RMS drawing number to include nomenclature, and estimated reliability. Criteria for the estimate will be provided in the introduction to that report.

5.1.3.4 Operations and Support Task Analysis. Utilizing the findings of the FMECA, the NCSC Project Manager will conduct a operations and support task analysis. The analysis will be accomplished in accordance with MIL-STD 1388-1A, Task 301.2.4 and reported in accordance with DID number DI)S)4057. The DID will be modified to include recommended RMS crew personnel responsible for the tasks identified. Required tools and test equipment for the maintenance tasks will also be identified in this analysis.

5.1.3.5 Preventive Maintenance Analysis. Utilizing results of the FMECA, the NCSC Project Manager will conduct a Preventive Maintenance Analysis identifying maintenance tasks to be accomplished for the RMS. The results will be documented in accordance with DID number DI)L)2208.

5.1.3.6 Maintainability Assessment. The NCSC Project Manager will ensure that the Maintainability of the RMS is readressed. The RMS Maintainability representative will be tasked to attend design reviews and associated supportability splinter meetings and update his assessment to reflect the present RMS design.

5.1.3.7 Depot Maintenance Support Plan. A plan will be developed describing RMS Depot Maintenance requirements. The plan will identify sources and procedures for obtaining Depot Maintenance

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Table 5-1
RMS Numbering System

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support. The plan will be the responsibility of the NCSC Project Manager and provide sufficient data to procure those services if desired by the Navy.

5.2 MANPOWER, PERSONNEL AND TRAINING (MP&T)

A preliminary estimate of the types and levels of personnel to perform operations and maintenance functions are provided in Table 5-2. The intent of the MP&T effort is to ensure that sufficient training is provided the crew to meet RMS mission requirements. Training curriculum will be developed in accordance with the

schedule provided in Appendix A. Maximum use will be made of On-The-Job Training (OJT). In order to accomplish this effort the following analyses are required:

5.2.1 Manpower and Personnel Concept Document

The NCSC Specialties Engineer will perform Phase I of the Hardman Methodology in accordance with NAVSEA Hardman Methodology Procedures during FY 92.

5.2.2 Manpower and Personnel Resource Requirements Document

The NCSC Specialties Engineer will identify RMS Manpower and Personnel resource requirements through the performance of Phase II of the Hardman Methodology in accordance with NAVSEA Hardman Methodology Procedures during FY 92.

5.3 SUPPLY SUPPORT.

Supply Support planning will be accomplished for the RMS program to ensure that repair parts, replacement units, and consumable items (i.e. lubricants) are available to support the RMS mission. The U.S. Navy Ships Parts Control Center (SPCC) will be utilized for RMS supply support for militarized equipment.

The NCSC Specialties Engineer will ensure that supply support planning is accomplished for the RMS program. The supply planning will include identifying sources for spare assemblies and parts, ensuring a complete complement of parts is turned over with the RMS system, a Consolidated Shipboard Allowance List is prepared and that plans are in place for replacement, procurement and/or Depot refurbishment.

5.2.1 Repairable Items List (RIL). Utilizing the findings of the FMECA, the RMS Program Diagram, and the Operator and Maintenance Task assignment, the NCSC Specialties Engineer will

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Officer in Charge	1	O-4
Assistant Officer in Charge	1	O-1
Machinist mate	2	E-7, E-5
Electronics Tech/FBM navigation	3	E-7, 2 E-5
Sonar Tech/Submarine	2	E-6, E-5
Interior Communications Tech	2	E-6, E-4
Storekeeper	1	E-4
Photographers Mate	1	E-6
Total	13	

Table 5-2
RMS PERSONNEL REQUIREMENTS

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develop a RIL identifying repairable RMS items with associated Sources, Maintenance level, Recoverability (SM&R) codes and cost for RMS items down to the "Lowest Replaceable Unit". This document will be available for the CDR. The document will be reviewed with the Program Manager and SUBDEVGRU personnel and redlined. Items not clarified at the CDR will be addressed at the 60% review.

5.2.2 Provisioning Parts List (PPL). A preliminary RMS PPL will be developed by the NCSC SpecialtiesEngineer based upon the results of the SM&R assignments and the review (Paragraph 5.3.1). The PPL will be available for the 60% review and updated prior to the 90% review.

5.2.3 Consolidated Shipboard Allowance List (COSAL). A COSAL will be prepared by the NCSC SpecialtiesEngineer in a format to be determined. The COSAL will be available for the 90% review.

5.2.4 Spare Parts Procurement Plan. A plan will be developed providing RMS supply support procedures. The plan will identify sources and procedures for obtaining RMS spare parts. The plan will be the responsibility of the NCSC SpecialtiesEngineer and will provide sufficient data to procure contractor services if desired by the Navy at a later date.

5.3 SUPPORT AND TEST EQUIPMENT (S&TE).

The NCSC Specialties Engineer will ensure through the LSA process that S&TE, with associated data, required to support Organizational maintenance will be turned over with the RMS system.

5.3.1 S&TE List. An S&TE list will be developed utilizing data identified in the Operations and Support Task Analysis (See paragraph 5.1.3.4). The list will include S&TE sources, cost, maintenance task reference, and documentation (i.e. manuals).

5.3.2 Calibration Requirements. The NCSC SpecialtiesEngineer will identify RMS S&TE calibration requirements. The calibration requirements will be added to the S&TE list (See paragraph 5.4.1).

5.4 RMS TECHNICAL DATA

The NCSC SpecialtiesEngineer will ensure that adequate Operations and Maintenance procedures are available for turn-over of the RMS system. U.S. Navy procedures and formats will be utilized for the documentation. However, commercial documentation will be utilized to the maximum extent possible. A technical documentation verification and validation effort will be accomplished prior to turn-over of all documentation. Redline documentation will be utilized for testing. Major changes will be incorporated prior to turn-over. Final documentation updates will

be accomplished by NCSC upon completion of the Operation and Technical evaluation period.

5.4.1 Drawings. Level III maintenance drawings will be developed by the NCSC SpecialtiesEngineer and will be delivered with the RMS system at time of turn-over.

5.5.2 RMS Transportation/Installation Manual. The NCSC Specialties Engineer will develop an RMS Transportation/Installation Manual. The manual will provide step-by-step procedures for shipping, installation, pre-operation calibration and testing, post-operation cleaning/maintenance, and stowage. The plan will also provide a materials list identifying spare parts, support equipment, and documentation with designated location.

5.5.3 RMS Operations Manual. The NCSC SpecialtiesEngineer will develop an RMS Operations Manual formatted in accordance with the requirements of MIL-M-63036 (TM). A preliminary manual will be available for training TECHEVAL personnel.

5.5.4 RMS Maintenance Manual. An RMS maintenance manual will be developed by the NCSC SpecialtiesEngineer for Organizational level maintenance. The manual will be formatted in accordance with MIL-M-63038 (TM). A preliminary manual will be available for the TECHEVAL.

5.5.5 RMS Preventive Maintenance Procedures (PMS). Procedures for preventive maintenance actions will be developed by the NCSC SpecialtiesEngineer in accordance with Reliability Centered Maintenance procedures. Preliminary PMS procedures will be complete for the TECHEVAL. The PMS procedures will be updated upon completion of the evaluation period.

5.6 TRAINING AND TRAINING SUPPORT

Training and Training Support requirements for the RMS will be identified as a part of the LSA process building on the Hardman Analyses (Para. 5.2). Documentation required at this time include the following:

5.6.1 RMS Training Plan. The NCSC SpecialtiesEngineer will develop an RMS Training Plan. MIL-STD-1379 will be utilized as a guideline for its preparation. The plan will be delivered and updated as indicated in Appendix A.

5.6.2 Training Curricula Development. Training Curricula will be developed for RMS Installation and Transportation, Operations, and Maintenance. Curriculum will be developed in three phases (I, II, and III) Phase I will be accomplished prior to the CDR and will identify alternative approaches to training and outlines for the

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recommended approach. Phase II curriculum will mark the 60% level of curriculum development. Phase III curriculum development will result in curricula adequate to train the crew in installation, operations and maintenance skills. The curriculum will be in a format compatible with MIL-STD-1379 and available prior to Initial Operations Capability (IOC). The curriculum will be validated and redlined prior to turn)over of the system. Major changes only will be made to the curriculum. Final curriculum updates will be the responsibility of NCSC.

5.6.3 Instructor Training. Instructor training will be provided to personnel at NCSC prior to turnover.

5.7 Computer Resources.

Computer resources for the RMS consist of the management information system (See paragraph 4.1.2) and microprocessors for RMS mission control with associated software. The NCSC SpecialtiesEngineer will ensure that documentation and capabilities will be provided identifying procedures for RMS computer hardware and software support as has previously been discussed in paragraph 5.5.5.

5.8 Facilities.

Facilities requirements include ensuring that proper planning is accomplished with regards to maintenance facilities and training facilities. The NCSC SpecialtiesEngineer will ensure that facility requirements are reviewed for adequacy at the CDR and the supportability reviews. RMS Organizational maintenance facilities aboard ship will be included in the RMS Transportation/Installation Manual (See paragraph 5.5.2). RMS Depot support facilities requirements will be provided in the RMS Depot Planning Annex to this plan. Training facility requirements will be identified in the RMS Training Plan (See paragraph 5.2.1).

5.9 Packaging, Handling, and Transportation (PHS&T). PHS&T activities are critical for the RMS project due to the space and environmental requirements associated with its mission. The NCSC SpecialtiesEngineer will retain responsibility for the following activities.

5.9.1 RMS Logistics Flow Chart. A Logistics Flow Chart will be developed to depict: 1) the movement of the RMS from NCSC facilities to operations location aboard ship; and 2) the movement from ship to the unloading and storage areas at Fleet locations (TBD). This chart will identify handling precautions and handling equipment required to move the RMS system. A listing of that equipment will be provided to the users at the 60% review to ensure

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their planning includes adequate consideration with regards to storage and equipment requirements. This information will also be incorporated into the RMS Transportation/ Installation Manual as discussed paragraph 5.5.2.

5.9.2 RMS Packaging Assessment. Packaging requirements will be assessed to ensure sufficient protection is provided to the RMS system. The assessment will identify what requirements must be placed on spare parts vendors and Depot repair facilities for unit protection. These requirements will be specified in accordance with MIL-STD 794 and included in the Depot Maintenance Support Plan (See paragraph 5.1.3.8) and the Spare Parts Procurement Plan (See paragraph 5.3.1.4).

5.10 DESIGN INTERFACE

The NCSC RMS Specialties Engineer is responsible for implementation of the Design Interface program. The efforts associated with Design Interface include the following:

5.10.1 LOGISTIC SUPPORT ANALYSIS (LSA)

LSA will form the basis for all RMS supportability decisions and provide the information from which all RMS ILS products will be developed. The LSA Strategy for the Remote Minehunting System dated September 1991 describes LSA activities associated with the development activities.

5.10.2 RELIABILITY, MAINTAINABILITY, AND QUALITY ASSURANCE (RM&QA)

RM&QA activities for the RMS program will be identified in the Reliability and Maintainability Program Plan (Preliminary) dated 1992 and the RMS Quality Assurance Program Plan dated 1992. The Specialties Engineer (Code 3120) is responsible for implementation of those plans. Status will be provided at all program reviews and supportability reviews.

5.10.3 *Human Systems Engineering.

RMS Human Systems Engineering considerations will be included in a Human Systems Integration plan as well as RMS design and test activities. The Program Manager will perform an RMS Human Factors assessment prior to the CDR and include any additional analyses as action items in that review.

5.10.4 RMS Safety Considerations.

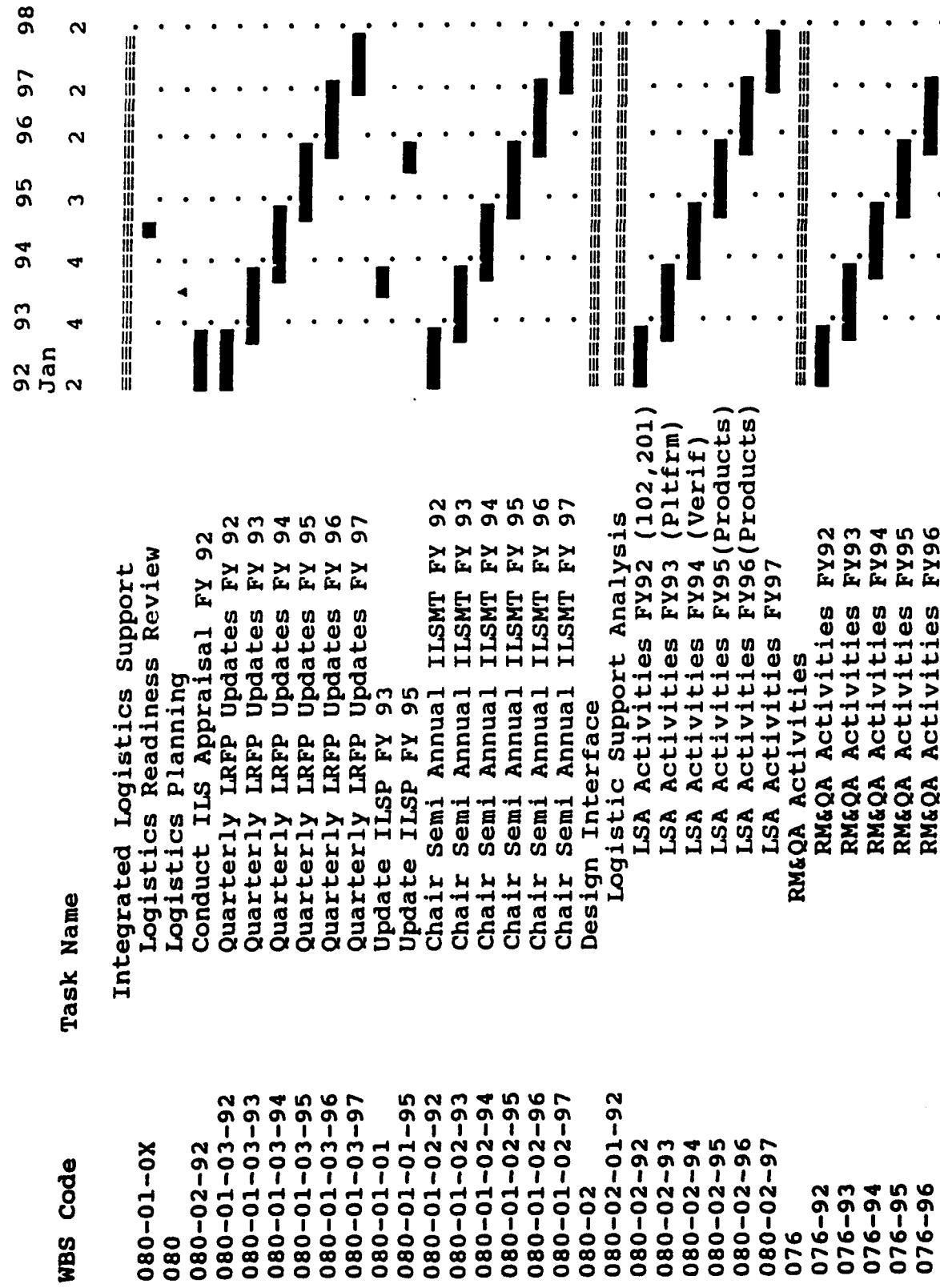
Safety of RMS crew and equipments will be included in all ILS considerations and products as described in the RMS System Safety Program Plan to be developed in FY 93.

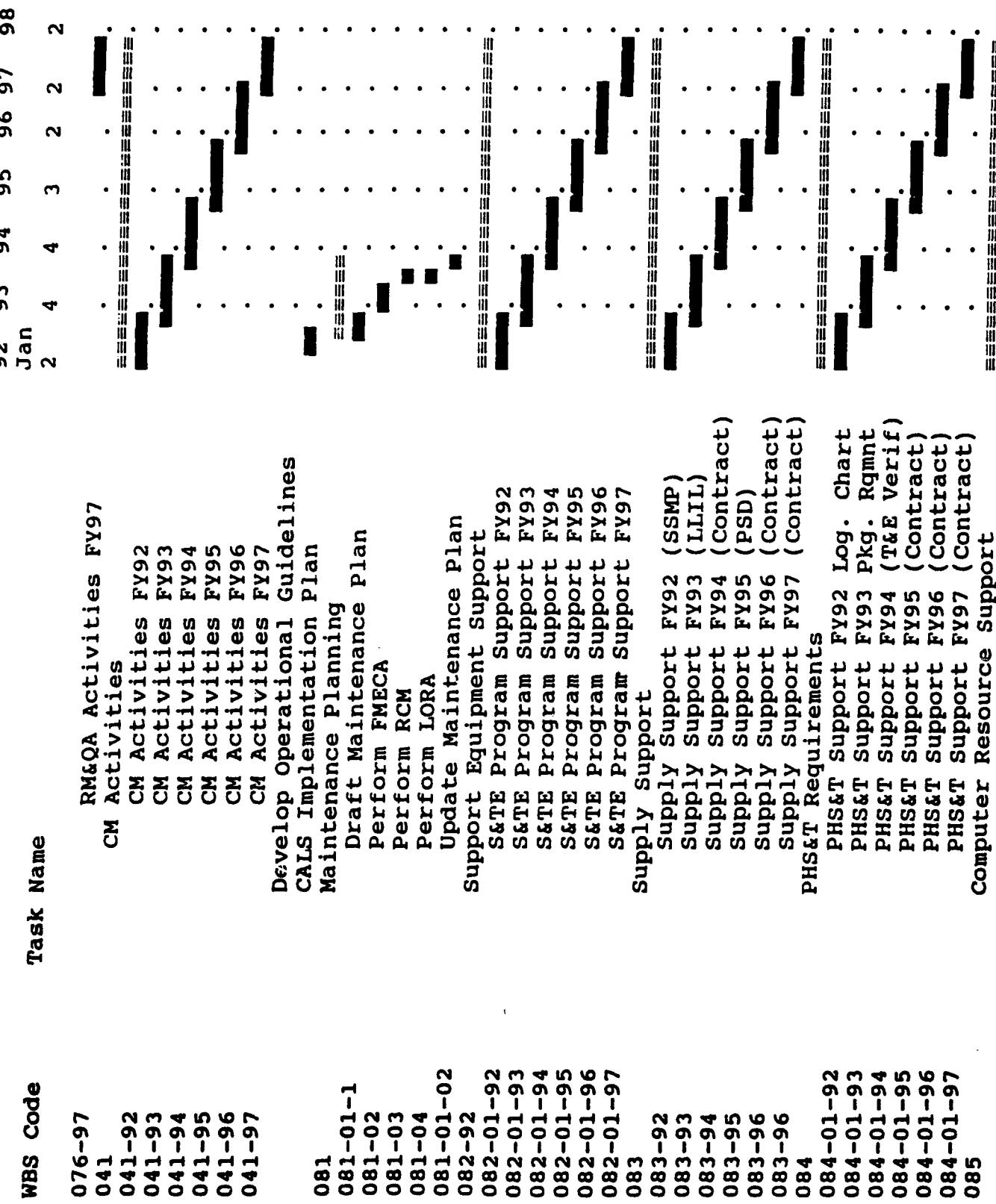
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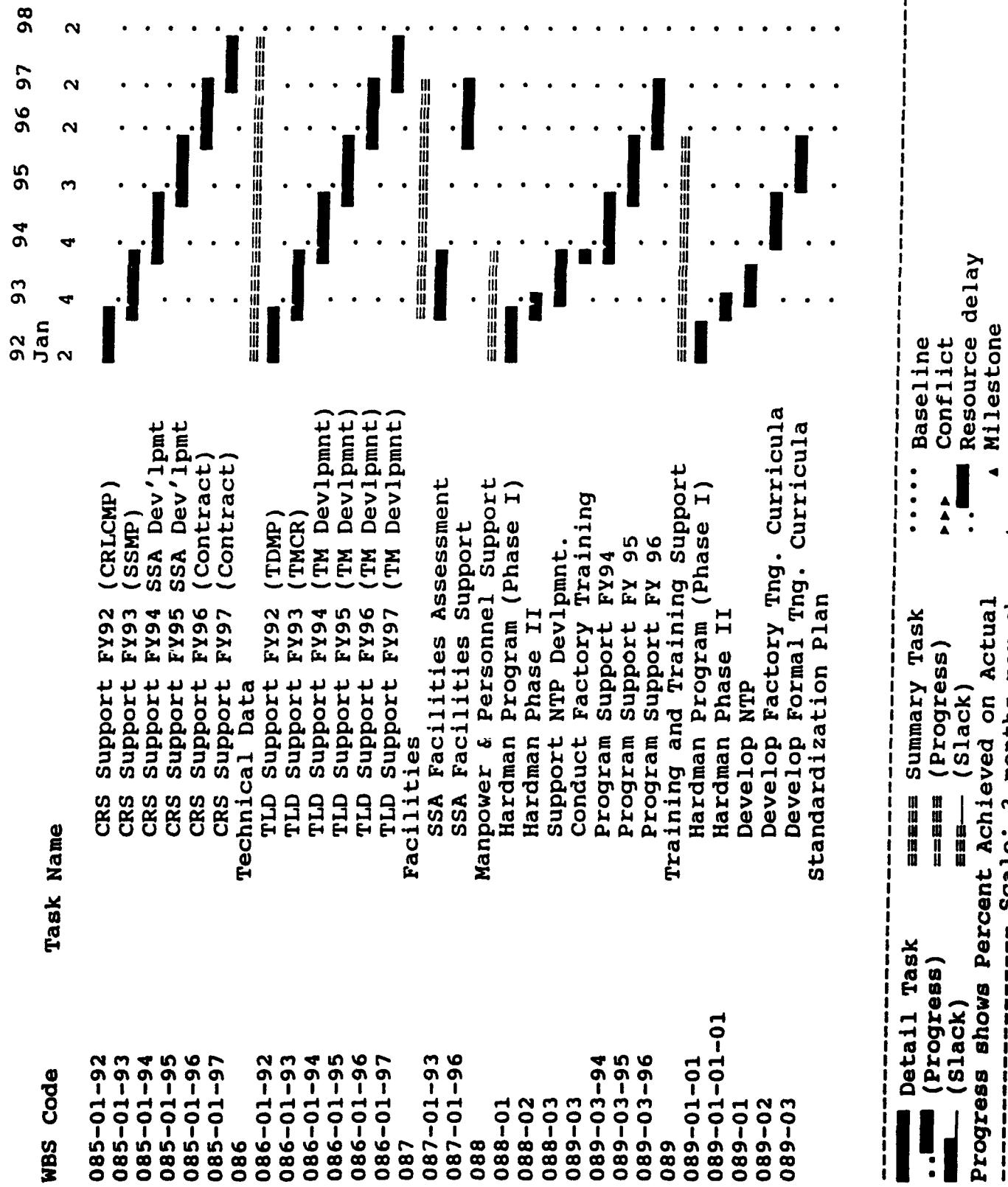
**APPENDIX A
ILS Program Milestones**

Schedule Name : RMS ILS Program Milestones
Responsible : E. Benner
As-of Date : 19-Aug-91

Schedule File : RMSD&V







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APPENDIX B
Chronological List of Milestones by Element

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APPENDIX C
Life Cycle Cost Information

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APPENDIX D
RMS Supportability Milestones